

#### **DETAILED ACTION**

This Office Action is in response to the Amendment filed on December 17, 2008. Applicant's cooperation in amending the claims to overcome the claim rejections relating to indefinite claim language is also appreciated.

Claims 1, 10, and 11 were amended; and

Claims 4-9, 12, and 13 were deleted/cancelled.

#### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Elias C. Borges (Reg. No. 46,424) on Monday February 2, 2009.

The application has been amended as follows:

-- 1. (Currently amended) An engine or a pump comprising:

at least one toroidal cylinder,

two impellers with radial vanes rotatably mounted in said toroidal cylinder with said impellers cooperating with said toroidal cylinder to define working chambers between adjacent vanes,

each of said impellers including to one side thereof at least one rotary valve element which rotates with each of said impellers and selectively opens

and closes passages in [[said]] a cylinder housing to said working chambers for inletting and exhausting a working media;

    said rotary valve elements cooperating with said cylinder housing such that the position of each of said rotary valve elements defines media flow through said engine or pump, and

    wherein each of said rotary valve elements includes two outwardly extending lobes that cooperate with a valve portion of said cylinder housing, said lobes closing ports in said cylinder housing to said working chambers as a function of the angular position of said valve elements. –

-- 10. (Currently mended) An engine or a pump comprising:

    at least one toroidal cylinder contained in a cylinder housing,  
    two impellers rotatably mounted to the cylinder housing,  
    each of said impellers having radial vanes rotatably mounted within said toroidal cylinder and a at least one rotary valve element mounted to the cylinder housing adjacent the toroidal cylinder,

    said impellers cooperating with said toroidal cylinder to define working chambers between adjacent vanes,

    said at least one rotary valve element rotating with each of said impellers and selectively opens and closes passages in said cylinder housing to said working chambers for inletting and exhausting a working media,

said rotary valve elements cooperating with said cylinder housing such that the position of each of said rotary valve elements defines media flow through said engine or pump wherein each of said rotary valve elements includes two outwardly extending lobes that cooperate with a valve portion of said cylinder housing, and

said lobes closing ports in said cylinder housing to said working chambers as a function of the angular position of said valve elements. –

***Examiner's Comment***

The claimed features are to be amended as set forth above in order to maintain the consistency of claims and addressing lack antecedent basis in claims.

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the Prior Art fails to disclose or renders obvious the claimed combination of an engine or a pump comprising at least one toroidal cylinder, two impellers with radial vanes rotatably mounted in said toroidal cylinder with said impellers cooperating with said toroidal cylinder to define working chambers between adjacent vanes, each of said impellers including to one side thereof at least one rotary valve element which rotates with each of said impellers and selectively opens and closes passages in a cylinder housing to

said working chambers for inletting and exhausting a working media; said rotary valve elements cooperating with said cylinder housing such that the position of each of said rotary valve elements defines media flow through said engine or pump, and including:

*"each of said rotary valve elements includes two outwardly extending lobes that cooperate with a valve portion of said cylinder housing, said lobes closing ports in said cylinder housing to said working chambers as a function of the angular position of said valve elements."*

**Regarding claim 10,** the Prior Art fails to disclose or renders obvious the claimed combination of an engine or a pump comprising at least one toroidal cylinder contained in a cylinder housing, two impellers rotatably mounted to the cylinder housing, each of said impellers having radial vanes rotatably mounted within said toroidal cylinder and at least one rotary valve element mounted to the cylinder housing adjacent the toroidal cylinder, said impellers cooperating with said toroidal cylinder to define working chambers between adjacent vanes, said at least one rotary valve element rotating with each of said impellers and selectively opens and closes passages in said cylinder housing to said working chambers for inletting and exhausting a working media, and including:

*"said rotary valve elements cooperating with said cylinder housing such that the position of each of said rotary valve elements defines media flow through said engine or pump wherein each of said rotary valve elements includes two outwardly extending lobes that cooperate with a valve portion of said cylinder housing, and said lobes closing ports in said cylinder housing to said working chambers as a function of the angular position of said valve elements."*

***Conclusion***

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB  
February 2, 2009

/Thai-Ba Trieu/  
Primary Examiner  
Art Unit 3748